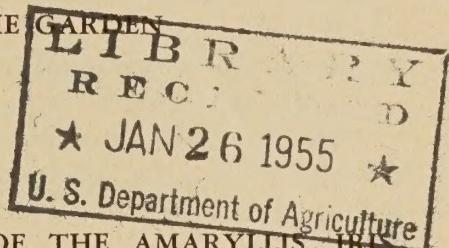


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BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS,
ORCHID, GESNERIA AND OTHER PLANT FAMILIES
AND MANUAL OF THEIR CULTURE.

Many Reduced Prices. New Items Listed. Complete Culture Directions.
A Personal Letter,—to You,

SPRING 1955



CECIL HOUDYSHEL

1412 Third St.

La Verne, Calif.



Librarian
U.S. Department of
Agriculture
Washington, D.C.

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HOME. A PERSONAL LETTER,—TO YOU.

Dear Floral Friends,

We are never able to answer all the friendly letters we receive. Therefore we include a letter to you as the introduction of each catalog. Please do not forget that this is a personal letter,—to you.

We received a Christmas card this year from a friend whom I have known since my early college days, Dr. Joseph Cook Shaw of Topeka, Kansas, sometimes known as the Kansas Troubadour.

In this card he typed his most famous poem and the one I like the best.

Home is where the heart is,
Where life flows along like a stream;
Where love and hope and faith and friends
Are everything they seem.
Life is not in heart beats,
Nor in wealth or gold untold.
But in loving thoughts and kindly deeds
Our hearts and lives unfold.

This poetical view of the ideal home is well worth our consideration. Too often we do not achieve this ideal in full, but I believe and hope that many do.

American home life is of primary importance. School and church are almost equally important in the development of the social fabric that helps make America great.

The great nations of history have been composed of citizens who loved their homes. England and Germany are examples. When home ties weaken, the nation weakens, and at last fades out. We name few names but we wonder if present nations, where the state is stronger in influence than home, church and school, can survive a thousand years or longer as Britain and Germany have and as America doubtless shall. Said Jane Addams, "America's future will be determined by the home and the school." From Mrs. Sigourney, "The strength of a nation, especially a republican nation, is in the intelligent and well ordered homes of the people." Joseph Cook, "Only the home can found a state."

The first family home was in a garden. That is still the best place and if one cannot have a home in a garden one can have a garden in the home. The best of all is when we can have both house plants and an outside garden.

Every successful merchant feels that he is performing a public service. That is the way we feel about our business. We know you need flowers and it makes us happy to supply them. We want you to note our listings. Flowers help to make a home.

Our largest selling item at present is African Violets. We believe we have the finest collection on the West Coast, in two air conditioned greenhouses. On catalog pages 24 to 26, we describe their culture and following that we list 75 var. of plants and 163 varieties of leaf cuttings. We have probably 200 or 300 other sorts in numbers too small to list. Don't overlook their relatives, in the family Gesneriaceae. Episcias, Smithianthas, Achimenes, Gloxinias, etc., are most satisfactory house plants.

Our next best selling item is Amaryllis. On p. 9 we tell you how we grow them, outside or in pots as house plants. We list the best American strain and 14 of the Warmenhoven (Royal Dutch) and Ludwig strains. Every one will give you the greatest

satisfaction. Be sure to pollinate the flowers and give yourself the fun of watching their seedlings grow to maturity and flowering.

Garden Clubs interested in a slide program with a typed lecture, please consult Mrs. Houdyshel.

Those in L. A. area, come to 2nd Annual Show of Pomona Valley A. V. So. at La Verne, Recreational Hall, 2nd and D St., Apr. 18, 1 p.m. to 9 p.m.

I am wishing for all of you a normal, happy home and many flowers.

Sincerely, Cecil Houdyshel.

TERMS AND INSTRUCTIONS FOR ORDERING

Prices in this catalog cancel all former prices. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 3% Sales Tax.

Remit in advance, in full, by check or M.O. No C.O.D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. Checks and M.O.'s must be payable to Cecil Houdyshel to fit our endorsement stamp. 1, 2 or 3 cent stamps are accepted for small sums.

Postal rates have more than doubled but we still prepay all items unless listed "postage extra," when the order is for \$1.00 or more. If under \$1.00, send 15c extra. If you wish to add a little for postage it will not be refused. When postage extra is required or if sales tax is due and you do not send, we notify you before shipping and charge you 5c for the notice. Thus we both lose. Better to send in the first place.

If you want your order to go **Express Collect** for added safety and protection we include either larger sizes or extras. If by **air mail** we charge the customer only the excess cost above that required by regular parcel post. Estimate this and state you will promptly pay the difference if not enough.

Insurance up to \$5.00 costs 5c extra. \$5.00 to \$10.00, 10c. \$10.00 to \$25.00, 15c. Over \$25.00, cost is in proportion to \$25.00 value rate. Postal insurance covers all except freezing in transit. Only Express covers freezing. **Special Handling** costs 15c up to 2 lbs. 2 to 10 lbs., 20c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 35c. 2 to 10 lbs., 45c. Over 10 lbs., 60c. Each fee is for one package only.

Order blanks. Make your own. They should not be in letter form as this makes it difficult for packers. Place one item only in a line, in this order: 1. Quantity ordered. 2. Name of item but not description. 3. Price of item. Below add other extra expenses like sales tax, insurance, Special Delivery, postage if required.

Wholesale. We give no discounts to dealers. There are several items we can supply wholesale. Send your want list and we will quote our best quantity prices.

Foreign Orders. If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. Many Latin American countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your Postmaster.

Partial Shipments are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting.

We **guarantee** our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume

responsibility if you do not. Such a guarantee usually means that the expense of replacements is spread over the entire sales and everyone pays more for the plants. Everyone fails sometimes and we try to learn from our failures. As necessary **culture directions** are in this catalog, we send none with the bulbs and other plants.

Catalogs. Spring Catalog mailed Jan. 15. Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested please refuse catalog or ask P.M. to return at our expense. Current catalogs are free. If an old catalog is wanted, please send a dime for it.

We ship to every state and territory and to every continent. Calif. bulbs and plants do well, everywhere.

General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus. Some plants, like Bearded Iris, do best in a heavy soil. Plants of this nature seldom if ever like shade or acid soils and deep drainage is not so necessary. Some plants, like Gloriosas, must have deep sandy soil. Probably most tuberous plants prefer sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizer. We recommend only animal manures, compost and commercial fertilizers that are mostly of organic origin such as Spoonit, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary for their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over-fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, which we list under Garden Supplies.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like Ranunculus. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soil than in heavy soils and in cold climates to protect them from frost.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphis, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled. See our listing of **Insecticides** under **Garden Supplies**.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family),

Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like Gladiolus prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. I am told that Texas soils are sometimes too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Chlorosis of plants, indicated by lighter green streaks of foliage, may not be due to a virus disease, in all cases. It may indicate lack of all required nutrients, some of which can not go into solution in an alkaline medium. Among such nutrients are Nitrogen and Iron which are soluble only in acids. Mild acidity is usually best.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A $2\frac{1}{2}$ " Amaryllis, for example, needs a 6" pot. A $1\frac{1}{2}$ " Eucharis needs a 5" pot. Small bulbs like Ranunculus or Achimines may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely. Only very sandy soil will answer this purpose and the sand should be rather sharp and coarse. Add enough sand so that it feels very gritty. The potting soil we like best is about 2 parts of peat or leaf mould and 1 of sand. If peat is used a little woods earth or pure rotted leaves and twigs may be added. Plain dirt, especially if clay is present, or any mixture that becomes lumpy when dry is likely to produce poor results. Mulch surface with wet sphagnum to prevent erosion when watering and too rapid drying at surface.

Basketing. Vining or pendant plants like Achimenes, Aeschynanthes and several of the other Gesneriaceae, Begonia Lloydii, Ceropegias, etc. look best and do best in our wire baskets, altho they can be grown in pots, suspended by the "Snap-on" pot hangers. Wire baskets allow perfect drainage and we prefer them also for some orchids like Laelias. We offer the best wire baskets made. Painted wire baskets soon rust out. Ours are galvanized, polished, not soldered but welded.

Place a thick layer of wet sphagnum on bottom and sides of basket. It should be well compressed and at least 1" or 2" thick. For the center one can use a mixture of peat, leaf mould and sand—or any soil formula favorable to the plant. For certain Orchids, Episcias and sometimes other plants, we use only sphagnum thruout.

Fertilizers for pots and baskets. The soils recommended above are low in fertility. One cannot add enough to last an entire season. Such an amount would burn the young roots as rapidly as formed. A small quantity of dry, powdered dairy manure is safe but we seldom use it. We prefer to add 1 tablespoonful of bone meal which is slowly soluble and slow acting and a teaspoonful of blood meal, which is strong and quick in action, to each 6" potful of soil. Too much blood will burn. When plants are in full growth, they may be fed with weak liquid manure, color of weak tea every 3 to 4 weeks. Spoonit supplies a more complete ration, better balanced and more convenient. Use of inorganic forms of nitrogen can have bad results.

Temperatures and light exposure are discussed with the listings.

Sources of Further Information. Always consider the source of your information. Experience is worth more than reading knowledge. Commercial growers usually have had the experience. Please note our **Garden Reference Books**. Join local Garden Clubs. Subscribe for as many Garden Magazines as you have time to read. We especially recommend **The Flower Grower**, Dept. H., Albany, N. Y., **Popular Gardening**, Dept. H., Albany, N. Y. **Horticulture**, Dept. H., Boston 15, Mass.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedie of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. Price \$52.00.

Hortus Second (Bailey). A concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedie of Hort. It contains a few culture hints. Price \$12.50.

Amaryllis and How to Grow Them. By Peggy Schulz. This book was written for amateurs and by a well known amateur. It contains much useful information. 128 pages, many line drawings, photographs and two colored plates. \$2.95.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. Bulbs and all garden plants. 251 pages. Price, \$3.50.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price, \$3.00.

Better Homes and Gardens Garden Book. This book contains more complete culture advice on every ornamental plant, than any other similar book. It covers vegetables, flowers, shrubs and trees; their culture in all sections, their relative value and uses. 480 pages. Fully illustrated by photographs, color plates and line drawings. Loose leaf binding so that many more pages of notes or clippings can be added. Thumb indexed. Price, \$3.95.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. 266 pages, \$4.00.

How To Grow Rare Greenhouse Plants. A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

Geraniums, Pelargoniums, by Helen Van Pelt Wilson. 248 pages, 7 color plates, many drawings and illustrations. Best book on this subject. \$3.95.

Gloxinias, and How to Grow Them, by Peggy Schulz. Illustrated by colored plates and line drawings. Many Gloxinia relatives discussed, 128 pages. \$2.95.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$2.75.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price, \$3.50.

How To Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price 25c.

How to Grow Cattleya Orchids and a few others is told briefly in our 1949 Orchid Price List. The listings are now all cancelled. Price, 15c.

The Complete Book of African Violets. By Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$2.95.

How To Grow African Violets. By Carolyn Rector. 94 pages, paper-board covers. Illustrated. How to pollinate, hybridize, grow from seed or leaf cuttings, prepare soils, control pests and diseases, groom plants for show, etc., by a real grower. \$1.35.

A to Z On Fuchsias. 136 pages. Cloth bound. Illustrations, some in color. 700 varieties described. \$3.00.

Garden Supplies

Postage Extra is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Many do not and we must write for it. Here is how to find it. We are very near Los Angeles. Call your P.O. and ask the cost of postage on the packed weight given from your P.O. to Los Angeles and send us that amount. If you do not send the postage in full with order, (sales tax too if in Calif.) we write and ask for it before shipping and charge you 5c extra for the notice.

If your shipment goes by express, no postage is due. But the minimum cost of an express package is now \$1.85, any weight, any distance.

Snail-Kil Pellets. 1 lb., 45c, plus postage for 2 lbs. Two pounds, 75c, plus postage for 3 lbs.

Ant-B-Gon. Set of 4 filled dispensers, 80c, plus postage for 1 lb. Refilling liquid, 4 oz., 40c postpaid.

Thrip O cide. Contains DDT. Kills thrips on Gladiolus or other plants. Scale on Orchids. 4 oz., \$1.20 postpaid.

Vio-Vim, a fungicide and Bactericide for African Violets. 75c prepaid. Its effect is apparent in the stimulated growth of the plant.

Wonder Garden Spray. Spray as directed for cyclamen mite, mealybug, red spider and other pests. \$1.10 prepaid.

We assume no risk for results with insecticides.

Spoonit is the fertilizer we use on African Violets and on all house plants. A new, improved formula is now available. **Analysis:** nitrogen, 18%; phosphoric acid, 20%; potash, 17%. To use, dissolve level tablespoonful in 1 gal. water or level teaspoonful in 1 qt. Give transplants half strength. Apply once a month. It never burns. **Prices.** 6 oz. package 50c plus 8c postage. 15 oz. pkg., \$1.00, plus postage on 1 lb. (see paragraph 1 above.) 44 oz. pkg. \$2.00 plus postage on 4 lbs.

Potting Soils. We have not formerly listed potting soils but give soil formulas and list materials for making them, but many prefer to buy a ready made mixture.

Black Magic, African Violet Mix. The users praise it. 8 oz., price 45c. Plus 10c postage. Dampen before using.

Georgia Peat African Violet Planter Mix is close to a perfect soil for African Violets, Gloxinias and others. Contains nitrogen and trace elements. Large bag, 160 cu. in. about 24 oz., 60c plus postage on 2 lbs.

Horticultural Peat. High quality. 3 lbs., 50c, f.o.b. Send postage for 4 lbs.

Sphagnum Moss. Best we can get. 70c per lb., postage extra, for 2 lbs.

Osmundine, best Florida brown fiber \$1.35 per lb. package, postpaid.

Plant Labels. The following are plastic labels, easily written upon with pencil. **Pot Labels**, length 4½", 35c doz. Length 3½", 30c doz. Small labels for African Violets, 2" long, 25c doz. **Orchid Labels.** Perforated on one end, but without wire or cord, 2½", 30c doz. **Aluminum Tree Labels.** Emboss name on label with sharp pencil or ball point pen. Two sheets of Aluminum make this strong and permanent, with wire to tie on, 35c doz. Package of 50, \$1.00. On orders under \$1.00, send 15c extra.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price, with hangers, 8", \$1.00 ea., \$11.00/doz. 10", \$1.25 ea., \$13.50/doz. 16", \$2.75 ea. \$25.00/doz., postpaid.

Snap On Pot Hangers, for hanging any size pot. Galvanized. 50c ea. \$5.00 doz. Three or more, postpaid. On less, send 10c ea. for postage.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits ½" pipe. Adjustable fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$1.36. If by mail add 10c.

Hose End Fogger. Coarse or fine spray. Useful for spraying orchids, tub. begonias, etc., and for damping greenhouse to increase humidity or as a moveable fogger. \$1.50. Postage, 10c extra.

Rootone. Dust seed, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. ½ oz. 50c postpaid. 1 lb. can, \$5.00, plus postage for 2 lbs.

Vitamin B-1, 100 tablets. 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. **genera**) is mentioned first. After it, the species

(plu. also species) or horticultural variety is named. The word "Specie" has no horticultural significance. It means "hard money." The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full.

THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru Zephyranthes.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening of interest in Amaryllids.

The annual book, "*Herbertia*," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub of the U. S. Dept. of Agriculture, (now retired) the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present shortage of paper and its high price these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Mrs. Lydia Barnett, Membership Sec., 3162 Haven Park, El Monte, Calif., or you may include this membership fee with your bulb order to us.

The Society also publishes the following book, bound in Manila paper.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888. Order from Mrs. Barnett.

Amaryllid nomenclature. Carolus Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, Epidendrums, and under the genus Amaryllis he included certain Crinums, Zephyranthes, Sprekelias, Brunsvigias, Nerines, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classification and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved by "Gentes Herbarum," the publication of the Bailey Hortorium of Cornell University.

Agapanthus, Blue Lily of the Nile. They flower here in June to Aug. In the north they must be grown in large pots or tubs and wintered in a frost free room. Plant in full sun exposure in any good garden soil.

Agapanthus longispathus. Similar to well known A. orientalis, but smaller and earlier to flower. Profuse bloomer. For pot growing. 50c, 3 for \$1.25.

A. orientalis. Dark Blue. Larger than longispathus. Superior clone, \$1.50.

A. orientalis, Sky Blue. 75c.

A. orientalis alba. Pure white. \$2.00.

A. von Weillighi hybrids. Selected clone. A giant type, very large, round umbel of blue flowers on a tall stem. Late flowering, extending the season. \$2.50.

Amarcrinum Howardii (*Crinodonna Howardii*). A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. Fall bloomer, order early or it may skip blooming first year. Hardy in south. For large pots in north. Culture like Crinums. Very large, \$4.00.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they may be planted deeper in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids." Amaryllis must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough. The most common error is lack of sufficient moisture. They are endemic to the tropics and in many cases, where there is almost daily rain. The soil should contain much humus. Add well rotted manure and if not slightly acid, add some peat but do not acidify the soil with sulphur or aluminum sulphate. We do not advise planting imported, greenhouse grown bulbs in the outside garden.

In Pots. A 2½" bulb requires a 6" pot. Give a 3" to 3½" bulb a 7" pot. Remove dead roots but every vestige of living root should be left on. Our best success in flowering Amaryllis and in growing them on to larger, better bulbs is in a soil mixture composed of clean, sharp sand one part by volume and a mixture of pure organic material two or three parts. The latter may be pure peat or about half peat and half well broken up or decayed leaf mould, woods earth or completely reduced compost. The final mixture should have enough sand to feel very gritty. Such a mixture drains quickly but retains enough moisture around the roots.

To this mixture we add a tablespoon of bone meal and a teaspoon of blood meal. This is enough fertilizer until after bulbs have flowered.

One curved piece of pot over pot hole is sufficient for good drainage. Cover this with a layer of wet sphagnum. Set bulb in soil and mulch top surface with a layer of wet sphagnum. The neck and about ½ of bulb should be above soil surface. This surface should be ½" below pot rim. In potting carefully spread out all living roots as they are a great advantage to bulbs. Such bulbs will start more quickly and may be given a warm temperature at once. If there are few or no living roots on bulbs, set them first in a cool place, about 50°, for roots to form and growth start.

We water at once and again when growth has started. With mixture above advised, one is not likely to over water tho you should be a little careful at first, if the bulb had no living roots. For as long as they will grow, potted Amaryllis need frequent watering. They are not only heavy drinkers but gross feeders. If you give liquid manure or Spoonit every 3 or 4 weeks, it will be about right. It is also good to vary the diet.

Amaryllis like the sun. If the foliage fades the sun may be too strong or you may not be watering enough. In mid summer in our greenhouses we usually have to apply a little shading to the glass, partly on account of temperatures which may go to over 100° even in our air conditioned houses. Whitewash shading can be easily washed off when cooler weather arrives. In the house, give them a sunny window. Keep the bulbs growing vigorously until fall, Oct. or Nov. When outer leaves begin to go down, buds have been formed for next season's flowers and bulbs may be dried off and stored in a cool place. Inspect frequently.

This describes the method we used this season and formerly. 3¼" bulbs potted from Dec. to about Mar. increased in size. A few burst their 7" pots. Some became fully 5" in diam., others 4" to almost 5".

A. Ambigua. Lily shaped, white flowers with pink markings, on tall straight stems. 5 to 7 flowers in an umbel. The exquisite spicy fragrance perfumes the entire garden. Plant 4" deep in garden in south, to Okla. \$2.50.

Howard and Smith Hybrids. These are grown from seed produced by moving

selected field grown bulbs to greenhouses. There they are hand pollinated with each other and with a large stock of Dutch varieties. The resulting seedlings are field grown to flowering sizes. In the field, weak varieties perish. The surviving bulbs are thus far easier to grow outside in the south than imported, greenhouse grown bulbs.

Assorted Colors. We usually find that the better flowers come among the unclassified colors. Price. $2\frac{1}{2}$ " to 3" diam., 90c ea. 3/\$2.50. 6/\$4.75. 12/\$9.00. 3" or over, \$1.50 ea. 3/\$4.00. 12/\$15.00. $3\frac{1}{4}$ " diam. \$2.00 ea. 3/\$5.00; $3\frac{1}{2}$ ", \$2.50, 3/\$6.50.

H. and S. White Background, white with markings of pink, to scarlet or red. $2\frac{1}{2}$ " to 3", \$1.10 ea. 3/\$3.10. 3", \$1.60, 3/\$4.00; $3\frac{1}{4}$ ", \$2.25; 3/\$6.00; $3\frac{1}{2}$ ", \$2.75 ea; 2/\$5.00.

H. and S. Near White. These have lighter color markings than the White Background. A few seedlings of these are likely to be pure white. If pollinated by a pure White Dutch variety, superior seedlings will result. $2\frac{1}{2}$ ", \$2.00 ea. 3/\$5.50; 3", \$2.50; $3\frac{1}{4}$ ", \$3.00.

Royal Dutch Amaryllis, or Warmenhoven Strain. Leopoldi type, with short tube, wide open, large, flat flowers. All are pure self colors. Most of the following have been rated at the Valleevue Test Garden, at Cleveland, O. The highest rating is A.A. Known ratings are given below. They are all top size bulbs, mostly $3\frac{1}{4}$ " or over.

Bordeaux. A. 10" flowers of pure bordeaux-red. \$5.25.

Lucifer. The darkest red of fine contour and large size. \$5.50.

Moreno. A.A. 8" fls. Light wine red, suffused rose in throat. \$5.75.

Queens Page. A.A. Only 8" fls. are claimed but ours were even larger. Usually the opposite is true. Salmon. Perfect contour. \$5.75.

Red Master. Sold out.

Sweet Seventeen. B. 9" fls. Frosty salmon-rose on white giving a flesh-pink effect. \$5.25.

Violetta. Not a violet tint but a very lovely red close to tyrian-rose. \$5.50

All Royal Dutch and Ludwig Amaryllis are vegetatively reproduced, by divisions of the bulbs and are not seedlings. Hence all the bulbs of the same name are exactly alike.

Important. All Dutch Amaryllis are packed in a large bag of peat for insulation from the cold. Every bulb we sent out last year arrived in perfect condition. Since peat is needed in the potting soil, we add enough fertilizer, Blood and Bone Meals for a 7" pot. No other fertilizer is needed until after flowering. We hope you use this to make the soil formula we recommend. This service should be considered as worth \$1.00, if you compare prices.

Ludwig Amaryllis. No collection of fine Amaryllis can be complete without several of the Ludwig Dutch strain. We tested several the past season and found no disappointments. Like the Royal Dutch or Warmenhoven strain they are pure self colors unless described otherwise, with the probable exceptions of the pink varieties. I have never seen a perfectly self colored pink Amaryllis. All the following are $3\frac{1}{4}$ " diam. or over.

American Express. A.A. $8\frac{1}{2}$ " fls., light orient red. Throat darker, with violet tone. \$7.50.

Doris Lillian. A. $7\frac{1}{2}$ " carmine rose fls., that are most lovely. \$9.00.

Love's Desire. Ludwigs say this new fall 1954 introduction is their best pink. Their description: Coral pink. 9" flowers. A kodachrome shows some white in throat. We must cut profit to sell for \$9.00.

Margaret Truman. A.A. $7\frac{1}{2}$ " to 8" porcelain rose fls. Named in honor of a real American Girl. \$8.00.

Roselinde. $6\frac{1}{2}$ "—7", but most lovely flowers of soft carmine rose. A fine pink. \$6.00.

Snow Queen. $7\frac{1}{2}$ " pure white flowers with minutely ruffled edges. They open an immaculate white. \$6.00.

White Giant. 8" fls., pure white and perfect in contour. This and Snow Queen are best whites I've seen. \$7.50.

Wyndham Hayward. A.A. 9" fls. of dark orient red. Fine contour. This variety is the nearest to perfection in all qualities of a red Amaryllis that I've seen and is fittingly named in honor of Wyndham Hayward. \$9.00.

Complete Collection of the 8 var. Ludwig Amaryllis listed for \$62, price \$58.
Any 3 Amaryllis of the two strains for 5% discount from the single rate.

Please note. We are low on several of the Royal Dutch, (Warmenhoven) strain and this nursery reports that they are sold out completely. We can get no more this year. Therefore we request that you name substitutes when ordering. We are able to get one more shipment of Ludwigs. Order as early as possible to enable us to replenish our stocks if necessary. We usually are able to supply Amaryllis bulbs up to April, but early planted bulbs perform better.

Hardy Hybrids. These are not hardy outdoors in the colder states but as far north as North Carolina, Washington, D. C., and Oklahoma these have proven winter hardy if covered by 4" or 5" of soil and given a good winter mulch of straw.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors will be most welcome. 2 $\frac{1}{2}$ " price 75c ea. \$7.50/doz. \$50.00/100, prepaid. 3", \$1.00, \$10.00/doz.; 3 $\frac{1}{4}$ ", \$1.25, \$12.50/doz.; 3 $\frac{1}{2}$ ", \$1.50, \$15.00/doz.

Amaryllis Seed will cost you less if you buy the bulbs and grow your own. Be sure to pollinate the flowers. When the 3-parted stigma opens the ripe powdery pollen may be applied. When pods split they may be gathered, dried for a few days and seed planted in soil similar to that used in potting bulbs. Plant ½" deep and finish off with a thin layer of wet sphagnum. Or they can be grown in pure sphagnum, well broken up by rubbing or pounding. When crowded, transplant. If kept growing continuously, they should flower in about 3 years. When ripe we can supply H. and S. Strain seed, 1955 crop at 25 seed for \$1.00. Assorted Dutch Amaryllis seed, (do not name variety wanted) 8 for \$1.00. Send stamped, addressed envelope for all seed orders.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The orange flowers are produced in umbels of 10 to 25 in March and April.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced ½" apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 6" to 8" for small plants and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open soft yellow orange fls. \$1.00, \$2.00 and \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. We are closing out this lot and will send plants that may flower in 1955 and with good culture are reasonably sure for the next year. Price \$2.00 ea. Smaller sizes for \$1.00 and \$1.50.

C. cyrtanthiflora. The flowers are tubular and long, yet they are so numerous that

they fill a large umbel and make a beautiful floral display. They are distinctly different from other Clivias also in their time of flowering. There is not a month in the year when we do not sometimes have flowers. Price, \$15.00.

Most *Crinums* are large bulbs and plants tho a few are no larger than an Amaryllis. They are very popular in the south and are a common sight in southern gardens. Among trees and shrubs they are indispensable.

The lovely lily-shaped flowers are useful to florists especially those who must grow most of their own flowers. They are particularly nice in a wreath.

Culture. *C. bulbispermum* is hardy in the north, but there it should be planted 6" or more deep and mulched in winter. *Crinums moorei*, *Cecil Houdyshel* and *Powellii Alba* are equally hardy.

The ideal situation is among trees and shrubs, in a sandy soil but all except *moorei* can be grown in full sun exposure and in heavier soils. There should always be much leaf mould and peat incorporated in the soil—especially if heavy. The alkaline California soils need the addition of peat for growing *Crinums*. If your *Crinum* foliage becomes blotched with lighter green, as in the case where plants are infected with mosaic disease, the addition of much peat to this soil will lower the pH and probably cure the plants.

Crinums succeed in large pots or tubs but most of them require much space for house or greenhouse growing. Tubs can be stored over winter and set outside in summer. In the south the bulbs may be planted very shallow. Keep always wet when growing.

Crinum bulbispermum. We have sold this as "capense," then as "longifolia" but botanists give priority to the present listed name because first given. We are out of the white form, *alba*, and offer only the pink, *rosea*. 50c. Good blooming size, \$1.00.

C. campanulatum. Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00. Very large, \$1.50.

C. Cecil Houdyshel. Flowers deep rose pink. One of the best hybrids, all qualities considered. It has the same parents as *C. Powellii*. Instead of flowering only once, like *Powellii*, this hybrid has been known to give 12 or more flower scapes in one year. A large clump will give continuous bloom from spring to fall. It is hardy as far north as Independence, Mo. If planted 8" deep (to bottom of bulb) and heavily mulched over winter it has survived 10° below zero. Ralph Waldo Emerson, of Brooklyn, L. I., reports that his bulb has survived two winters and flowered two seasons. Spring is the best time to plant *Crinums* in the north. Thus they become well established before fall and are more winter hardy. Plant any time in the south.

We offer several sizes. Smaller sizes will give a start but are unlikely to flower the first year. Prices: Small, \$1.25; medium, a blooming size, \$2.00; larger, \$3.00. Jumbo bulbs in two sizes, \$4.00 and \$6.00. The latter will furnish a lot of flowers the first year. Keep this variety very wet at all times and its rapid growth and profuse blooming will surprise you. If we fill your order we guarantee its winter hardiness. If killed by winter cold we replace with another or equal value of other plants. Here we have flowers at least 11 months of the year, unless we have an exceptionally cold winter.

C. Ellen Bousquet. Large, glowing, dark wine red flowers. The most beautiful crinum. \$1.00 and \$1.50.

C. Erubescens. Milk and Wine Lily. Red purple center stripe on petals. 75c to \$1.50.

C. H. J. Elwes. Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Med. \$3.50.

C. latifolium. This species is usually known in horticulture as *C. yemense*. The pure white flowers are very large and attractive and fittingly adorn an unusually attractive plant in June to July. Large bulbs, \$5.00. Blooming size, \$4.00.

C. Louis Bousquet. Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. 75c and \$1.50.

C. Moorei. Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves give the plant great decorative value. Require shade. Nearly as hardy as *bulbispermum*. \$1.00 and \$1.50.

C. Peach Blow. Exquisite large pink flowers. Free flowering from largest bulbs. A valuable hybrid. Blooming size \$5.00. Largest for \$6.50. Probably tender.

C. Powellii alba. Extra fine pure white. One of the most valuable and beautiful Crinums. Small 50c. Good blooming size \$1.00. Largest, \$1.50.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. For pots only. We grow in 5" pots and shift to larger when too full, but crowding encourages bloom. We use exactly the same soil as for Amaryllis. Because they need abundance of water when growing vigorously and blooming, the drainage must be perfect. They are shade plants but need strong light and some sun, when growing well, to develop flowers. Frequently they flower very soon after potting. If they do not, induce good growth for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent entire loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. From 2 to 4 crops a year may be had. They are tropical plants and 65° is the best minimum night temperature. We offer best and largest imported bulbs we can get, about 2" diam., at \$2.00. Started plants in 5" paper pots, \$3.00 postpaid. Our imported bulbs may not arrive until March or April. Delivery as soon as they arrive. They should not be delivered in cold weather, anyway.

Elisena longipetala. Very rare and lovely Peruvian amaryllid. It is related to the Ismene but the pure white flowers are far more delicate and graceful. Culture like Ismene. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle south. It may be crossed with Ismene. \$2.00.

Haemanthus. The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be as for Amaryllis. They should have about half sun exposure. Pot with bulb only lightly covered.

Haemanthus produces red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this frequently as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf. Species are easily crossed to produce hybrids if anthers of mother plant are removed before ripening of pollen. Store pollen in advance in small stoppered glass phials, in refrigerator at 45°.

H. carneus. A small species that is winter growing like coccineus. Flowers are pink to flesh colored in an umbel on a 6" to 8" stem, in July. Two short, prostrate leaves follow the flowers. \$2.50. Delivery, late spring when dormant, but not after July 1.

H. coccineus. The true Blood Lily, altho all Haemanthus are known as Blood Lilies. The umbel of scarlet or blood-red flowers come in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Flowering sizes, \$2.00 and \$3.00. Extra large, that should give two scapes, \$4.00.

Order now and we can deliver about June.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in diam., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 7" to 9" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited. Price \$6.50.

H. multiflorus. In general appearance, it resembles Katherinae. Stem heavily spotted brown. This species is ideal for pots as it is more tropical and more tender. Blooms earlier. Flowers are described by botanists as blood-red but you may disagree. This exquisite species has been sold by florists for \$25.00 when flowering. Try crossing it with Katherinae. Blooming size, \$5.00. Largest bulbs, \$7.50. Our sizes are a little smaller than last year, but they are still good bloomers.

We ship H. Katherinae and H. multiflorus as soon as safe to mail. H. multiflorus is often not dormant until about Mar. 1. If shipment by mail is desired while still very cold, send \$1.00 extra for the same heavy insulation as described above for Amaryllis. Or we will ship f.o.b. express as soon as available if so directed.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced thru a long period that "beautiful every day" would be more apt, as a collection of several sorts shows masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

Hemerocallis Araby. 30". E. (evergreen). A lovely, pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

H. Chengtu. E. Brilliant coppery orange-red with carmine mid-zone. 36". July-Sept. 50c.

H. Cinnabar. E. Cinnamon sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

H. Crown Prince. E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 50c.

H. Evangeline. 40". Large, rosy flowers with purple eye zone. Early. 75c.

H. Florham. E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. Iris Perry. E. 36". July-Sept. Orange-bronze. 50c.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. Mandarin. E. 48". Lemon yellow. June-July. 50c.

H. Margaret Perry. E. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. E. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.

H. Modesty. 36". Large, pale, creamy yellow. Our nearest white. 50c.

H. Nubiana. E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 50c.

H. Patricia. 30". Pale yellow, large fragrant flowers. July-Aug. 50c.

- H. Radiant.** 42". Rich orange. June-July. 50¢.
H. Rajah. 40". Deep English red, veined darker. Garnet red eye-zone. July-Aug. 50c.
H. Rosita. E. 36". Near Carmine, tinted copper. Part shade best. \$1.00.
H. Royal. E. 40". Beautiful golden yellow. Fine texture. July. 75c.
H. Royal Ruby. All agree, it is the finest red, to date. 40". July-Aug. \$2.50.
H. Serenade. 48". Rose on apricot cream. Faint dark overcast. June-July. 75c.
H. Sibyl. E. Dark red-purple petals, lighter sepals. \$2.00.
H. Soudan. 36". Lemon yellow. Broad, wavy petals and sepals. June-July. 50c.
H. Vesta. 30". Deep orange with glistening gold sheen. May-July. 50c.
H. Vulcan. E. 30". Darkest maroon red. July-Aug. 50c.
H. Wau Bun. Large apricot, sprinkled fulvous-red. The twisted and curved petals add gracefulness to its beauty. 75c.

Complete Collection. The entire list of 32 varieties are priced singly for \$22.75. They will be labelled with permanent aluminum garden labels, an added value, for \$21.00 postpaid. If by express, f.o.b., we will send larger divisions.

Hymenocallis Harrisiana. True Spider Lily. The large snow-white flowers have very long, narrow petals which with the exserted stamens give them a spidery appearance and a delicate charm. The contrasting very dark green foliage adds to the beauty of the plant. The species is rare in cultivation tho it propagates freely by seed and bulb offsets. Plant in garden in early spring or pot in January. Can be shifted to garden after flowering. This is one of the few deciduous Hymenocallis. **Culture** like Ismene. Bulbs must be dug and stored over winter like Gladiolus and Ismenes in the north. Price \$2.00.

Ismene. Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."

Culture. They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot. Even in the south they must be covered by 4" of soil. Ismenes can also be grown in pots. See also their close relative, Elisena.

Ismene calathina. Type variety. 50c ea.

I. festalis. An Ismene-Elisena hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white Amaryllid is more elegant. The true variety, \$2.75.

I. Sulphur Queen. Hybrid of I. calathina and I. Amancaes. Light yellow. Very rare, beautiful and most desirable. \$1.00. Large \$1.50.

I. macleana. A very tiny Ismene on long stems. Probably the hardiest. 75c.

I. Olympia. The giant among Ismenes and it is magnificent. The huge flowers are tinted yellow when first opened. Bulbs become very large and propagation is slow, hence they are expensive. Price, \$3.00.

I. Advance. Improved form of Calathina. \$1.00.

Ismene Collection. One bulb of each, 6 varieties, \$8.25.

Sprekelia formosissima. Jacobean Lily. Orchid Amaryllis. Aztec Lily. Type variety. A well known, half hardy Amaryllid. Can be grown in pots or in the garden. In the far north, it can be dug and stored in the fall like Gladiolus. Bright scarlet, large flowers, somewhat orchid like in form. Seedlings vary in color. 75c.

S. formosissima superba. A larger form. 75c ea.

Tulbaghia violaceae. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz. Delivery all year.

T. fragrans. This much larger species has a large, true bulb, with glaucous green foliage. 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It was introduced to this country only a very few years ago. It has larger, more fragrant flowers than violaceae in the same

color. Evergreen. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$1.00. Delivery all year.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

Zephyranthes candida. Pure white, evergreen. Half hardy and easy in pots. 2 for 25c. \$1.00 per doz.

Z. grandiflora. The largest Zephyranthes. In the south its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 20c. Per doz. \$1.75.

Z. rosea. Small, but very lovely deep pink flowers. Fine in pots, about 8 or 10 in a 5" pot. 15c ea. 10 for \$1.25.

The Alliae, or Onions, are now classed in Amaryllidaceae. The following are ornamental and useful for seasoning salads, soups or meats.

Allium schoenoprasum. True Chives. Small clumps, 15c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c. (Try wintering in a pot.)

IRIS FAMILY — Iridaceae

The Iris is the type genus of this family. Bearded Iris and Gladiolus are the outstanding members. Maricas are lovely and curious house plants, truly "out of the ordinary."

Tall Bearded Iris. No garden is complete without Bearded Iris. Our small "Iris 400, Price List" includes only aristocrats. It includes complete culture information, and tells you how to get a profusion of flowers **every** year, not every other year. Price 10c. **Special Offer.** If you do not care for names, we offer surplus rhizomes from this lot, 20 to 30 var., no labels, 100 for \$10.00, f.o.b. express. If by mail, send postage for 12 lbs., you will get larger plants by express. Orders will also be filled from the price list.

If you are in the Los Angeles area, come and see our Iris about Mar. and April.

GLADIOLUS

How to Grow Gladiolus. Glads planted Jan. 1 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the east) are reasonably sure to escape the attack of thrips.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster and Chlordane can be bought from most local feed or seed stores. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants, cut worms, wire worms, etc.

Dust Gladiolus 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

If you cannot get it locally we can supply 1 lb. package for \$1.00, post paid. If in an express shipment price 60c. This Chlordane Kil Dust 5 kills nearly all pests.

Many will prefer to spray instead of dusting. For a spray use "Thripicide" which we list under "Garden Supplies," 4 oz. for \$1.20 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good Gladiolus. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

Sizes. Size No. 1, 1½" up. No. 2, 1¼" to 1½". No. 3, 1" to 1¼". No. 4, ¾" to 1". No. 5, ½" to ¾". No. 6, all under ½". In the following list L. means large, No. 1 or 2; M. means medium, No. 3 or 4; S. or small are No. 5 or 6. Smallest sizes bloom and often bulblets. Nos. 2 and 3 are preferred for growing commercial cut flowers.

Prices are for one bulb. Multiply by 10 for price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen.

Our bulbs are grown in rich soil, on the heavy side. They are not always as nice

looking as bulbs grown in the thinner sandy soil. They often perform better and we guarantee them to grow well. They are priced lower than usual prices. We believe we have enough of all but it's wise to name substitutes.

Bridesmaid. Color, peaches and cream. L. 8c.

Buckeye Bronze. Bronze-red. Fine for cutting. L. 7c. 12/75c.

Burma. Deeply ruffled, dark rose red. Opens 7 fls. at one time. Jumbo bulbs, 12c. L. 8c.

Capeheart. Early salmon rose. A favored florists pink. No. 1 and jumbo, 10c. L. 6c. M. 4c.

Debonaire. Tall, early pink. Jumbo, 8c. L. 5c. M. 4c.

Ethel Cave Cole. Favorite, best florists pink. Very large fls., many open. Jumbo 10c. #1, 8c. L. 6c. M. 5c. Bulblets, \$1.00/100. For Decoration Day flowers, plant jumbos.

H. B. Pitts. Very fine large orange pink. Fine for cutting. Jumbo, 10c. L. 7c.

June Bells. Earliest white. Tall, with large very beautifully ruffled fls. Jumbo, 12c. L. 10c.

Los Angeles. Sm. grenadine pink fls. Long ago a favorite of cut flower market, now valued for landscape use as one bulb has produced as many as 100 flowers. No. 1, 7c. L. 5c.

Margaret Beaton. Snow white with scarlet throat. Still a favorite. Jumbos, 8c.

Mauve. Our recent introduction of this unusual color. Jumbos, 12c. L. 8c.

Pinocchio. Most unusual color, blending to pink, yellow, green, orange and red, intensely ruffled and fluted. 4" fls. 7 open at a time on tall stem. L. 10c. M. 7c.

Poinsettia. Pure, rich light red. Called the finest commercial red ever produced. L. 30c.

Red Charm. Pure med. dark red. Opens 8 to 9 at one time. Jumbo, 10c. L. 8c. M. 6c. Bulblets, \$1.00/100. (Not less than 100 sold.)

Red Unknown. Name lost but a valuable pure red. L. 6c. Bbts., 100 for 50c.

Snow Princess. Early, pure white. As good as the best. L. 7c. M. 5c.

Spic and Span. Tall, ruffled deep pink. Up to 10 open. L. 8c.

Timor. Beautiful and unusual shade of red. Jumbo, 12c. L. 10c.

White Gold. Largest and earliest cream white. A 1-spike bouquet. Jumbos, 10c. L. 8c. Bulblets, \$1.00/100.

Assorted Varieties. No. 1 to Jumbo, \$1.00/doz. \$7.50/100, postpaid, or \$6.00, Express Collect. Nos. 2 and 3, fine bloomers, 50c/doz. \$3.50/100. On 100 we must send mostly No. 3 to customers beyond our 4th postal zone. Bulblets \$1.00/pint.

Miniature Gladiolus. Like a miniature carving, a cameo or fine lace, they are dainty, beautiful and alluring. Fine for cut flowers. All are good blooming size bulbs.

Crinklette. Ruffled orange pink. 15c. \$1.25/doz.

Fairy. Light lavender pastel. Dainty. 15c. \$1.50/doz.

Fairy Fancy. Cream and very nice. 15c. \$1.25/doz.

Kriss Kringle. True Christmas red. 15c. \$1.25/doz.

Oberon. Fine scarlet. 15c. \$1.25/doz.

Ruby. Early, ruby red. 20c. 3 for 50c. \$1.75/doz.

Snow Baby. A very fine white. 15c. \$1.25/doz.

White Butterfly. By Kunderd. Early white. 20c. 3/50c. \$2.00/doz.

Assorted Colors, miniatures, in endless variety. Special price, 10c ea. \$1.00 doz. You can afford a lot of the mixed and a few of the named. This is a genuine bargain as these are all named varieties, accidentally mixed.

Neomarica (Marica) have long been favorite house plants in the north, but rather rare. They are both curious and beautiful. The fugitive blue and white flowers on the tip of a leaf-like scape in Jan. to April are followed by small plants. They become heavy and the scape arches until young plants touch the soil and take root. Hence their common names, Walking Iris and Apostle Plant. **Culture:** Shade plants but they need early and late sun to induce flowering. Soil formula, sharp sand, leaf mould and peat or sphagnum. Evergreen. Keep well watered, constantly moist. Like most plants that are hardy and bloom well in So. Calif. gardens, they like cool temperatures, such as Cymbidiums, Veltheimias, winter blooming Oxalis, etc., tho for us they have also flowered well in the

greenhouse along with African Violets and Cattleyas. A temperature range of 40° at night, to 60° daytime would be about right.

Neomarica gracilis. Smallest and earliest. Use 5" pot. 75c.

N. Northiana. Larger plant and flowers, slow propagator. Use 6" pot. \$1.75.

N. hybrids. We crossed the above species and raised plants with flowers as large as Northiana, as profuse as gracilis and plants midway in size. They are rapid multipliers. \$1.75. All 3 kinds for \$3.75.

LILY FAMILY — Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinums*, *Callas*, *Cannas*, or any bulbs "Lilies," but this is an error.

Gloriosa. Climbing Lily. The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported. Small tubers flower but the larger ones will give 2 or 3 times as many. They also make larger, more showy plants.

Culture. They must have the good drainage of very sandy soil, to which it is advisable to add peat liberally. Leaf mould will do, but is not quite as good. If soil is heavy, dig out to a depth of 1 ft. and fill with 1 part top soil, 3 parts coarse sand and the peat. Plant tubers as soon as weather is quite warm in a horizontal position, 3" or 4" deep and mix a liberal portion of peat with soil close to tubers. Gloriosas prefer full sun exposure but will do well in slight shade. They like heat and abundant moisture. Lack of either will slow them down. We recommend only outdoor culture.

Gloriosa rothschildiana deserves the name **Glory Lily**. Very vivid colors, red with yellow markings turning later to deep red, in a true lily form. Flowers are long lasting and are used in corsages. Plant 4 ft. tall. Prices start at \$1.00 for a small tuber that should flower (but not guaranteed to flower). A sure to flower size, with right culture, \$1.50. Large sizes, \$2.00 and \$2.75 and extra large, jumbo tubers \$3.50.

OXALIS FAMILY — Oxalidaceae

Culture. *Oxalis* do best in sandy soil. They do very well also in poor soil. In pots, the drainage should be good and some coarse sand in soil will help. Most *Oxalis* like nearly full sun.

Oxalis brasiliensis. Bright magenta flowers. Starts growing in winter and continues to late spring. Bulbs, 25c ea.

O. crassipes. Tuberous. Bright rose flowers. Evergreen and everblooming. Tuberous rooted species start slowly. Keep moist. 15c ea. \$1.00 doz.

O. crassipes alba. White variety of above. 25c ea. or \$2.00 doz.

O. Regnalli. Large, truncate leaves, reddish on under side. Trifoliate. Nearly or quite evergreen and everblooming. Large white flowers. Tuberous rooted. 40c ea.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or *Zantedeschia*, Fancy Leaf Caladium, *Sauromatum*, *Amorphophallus*, *Arum*, *Drunculus*, *Anthurium*, *Spathiphyllum*, etc. All are shade plants and need acid soils.

Zantedeschias are not true Callas, tho this is their common name. **Culture.** Colored Callas, *Zantedeschia elliotiana* and *Z. rehmanni elegans* may be potted or planted in the garden in almost frostless deep south, any time after Feb. 15. Sometimes a little earlier if tubers are stored previously in a warm room and tubers are well sprouted. If the rest period, when the enzymes of bulbs and tubers are changing the stored starch into sugar, is too short, planting in cold wet soil may cause them to rot. When a bulb, corm or tuber is ready to grow, there will be root knobs on the base and top growth started.

A soil of peat and enough coarse sand to feel very gritty, as described for *Amaryllis* is good for most of the Araceae. Note exception as to *Anthuriums* and *Spathiphyllums*. Fertilize with *Spoonit* or manure water. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade.

Keep barely moist until growth is well started, then water freely. Cool temperatures suit them best. Hardy outdoors in S. Calif.

Zantedeschia rehmanni elegans. Improved light pink form. Jumbo bulbs, about 2" diam. or over, 75c. 1½" diam., 45c ea. Blooming size, 40c. Use larger sizes for pots.

Z. elliotiana. Deep golden yellow. If not given enough sun they become tall and spindly and fail to flower. 35c ea. 3 for \$1.00.

Z. aethiopica. White Calla, may be planted as late as March 1. 50c ea.

Amorphophallus revieri. Sacred Lily of India. Culture like Zantedeschia. The tubers may be stored dry and allowed to flower before potting or planting. We have only 4 or 5 huge, blooming size tubers for \$5.00 and \$6.00 ea. Smaller tubers for \$2.50 and \$3.50.

Sauromatum venosum. Lizard Lily. The long, serpent like spathe wriggles along on soil surface. I've seen persons jump, at their first look. Soil and culture similar to Zantedeschia. Large tubers, \$1.50 and \$2.00. Medium, \$1.00.

S. nubicum. Rare, collectors species. \$3.50.

Anthurium andraeanum. The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like, but rather flat, in glossy red, pink, orange, coral, rose and rarely white. They are much used for cut flowers in arrangements and corsages. They are ever-blooming if given correct conditions at all times, but sometimes take a vacation when very hot, very cold or dry.

Culture. Anthuriums and Spathiphyllums are tender tropical plants, suitable only for pot culture. **Soil formula.** They will grow in most any organic compost. We use and advise one part old osmundine, (discarded from orchid pots, new will do); one part peat. Add enough Sponge Rok or coarse sand to make compost very gritty and to hasten quick drainage. See Potting Directions under General Culture. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot, or build up with sphagnum. New roots must be kept covered.

Use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 45° does little harm other than to stop growth and flowering. 70° to 80° is a good daytime temp. Air should be very humid. Spraying foliage daily increases air humidity. They should never become completely dry, thruout. Water about every two days.

Shipping. They can only be shipped by express in cold weather. We ship out of pot by mail or in pot by express, f.o.b. at the same price. If shipped by express you have the advantage of having the plant correctly established in a pot. If by mail, you must supply the pot and compost and the plant is set back a little. Instruct us as to your choice about shipping. Prices are again reduced.

Anthurium andraeanum, Shaffer hybrids. This is the best strain. **Prices** are for assorted colors. Color of small plants is unknown. The figure in parentheses is the size of pot required. 3" plants, \$1.00; 4"—6" plants (4"), \$1.75; 6"—8", (4") \$2.25; 8"—10", (5"), \$3.00; 10"—12" (5" or 6") \$3.50. Plants over 12", (6") \$5.00. 8"—10" plants often flower, even smaller some times. Flowers from small plants are small. Very large plants produce very large flowers.

A. crystallinum. A beautiful foliage plant that does not need flowers. Leaves are cordate-ovate to 10" wide and 14" long, deep velvety green, prominently veined white. Pale rose on underside. Blooming sizes \$2.50 and \$3.00. Smaller plants, \$1.50 and \$2.00.

Spathiphyllum Clevelandi. Close relative and formerly classed as an Anthurium. Very free blooming. Foliage is oblong and pointed. Flowers are pure white and long, very attractive. They are easy to grow as house plants, in 4" pots. Small plants, \$1.50 and \$2.00. Blooming sizes, often in bloom when sent, \$2.50 and \$3.00. Postpaid or by express, f.o.b.

FANCY LEAF GERANIUMS

Fancy Leaf Geraniums have been having a renaissance of popularity. The gorgeous colors in their foliage surpass belief, until seen.

Culture. The Fancy Leaf plants are pot plants. The plants we send out are ready for 4" pots. Use only unglazed clay pots,—no plastics. Do not allow pots to stand in saucers of water. Give almost full sun for about one half day or more, strong light for the balance. If shaded much, stem rot results. Do not keep plants in a soggy condition but keep moist enough to prevent wilt.

All plants need air penetration thru the soil to their roots. Porous pots aid and friable soils are necessary. Geraniums especially, insist on this. The best soil is one that allows water to drain quickly yet retains enough for one or two days supply. Such a soil may be composed of good garden loam one part; peat, shredded or cut sphagnum, fibrous leaf mould, (or a combination) 3 parts; enough coarse sand or Sponge Rock to make the compost quite gritty. Be sure your final compost drains well. We mulch top of soil with sphagnum.

Do not add manure or fertilizer to potting soil.

When plants are received they will be in waxed paper pots, out of 3" pots. Do not use larger than 4" for geraniums as house plants. Disturb soil as little as possible. If plant is not bushy, pinch out the tip of the main stem. Water at once.

We are often told that plants arrive in excellent to perfect condition but even with expert packing, very often some of the leaves will be lost. They do not like the long dark night without fresh air. They are guaranteed to recover if our directions are followed.

Prices. If our prices are higher than those of another catalog, this is the reason. We make no packing charge. We prepay regular parcel post charges on orders for \$2.00 or over on Geraniums alone. We have bought from most of the other growers and have seen the plants. We send out much larger plants than any we have received. Most growers give no guarantee of safe arrival, but shift responsibility to the carrier. We replace plants that do not arrive in a living condition, if you handle as we advise. But you pay the postage and fees on replacements. It is advisable to send by air on long distances. Express shipments are usually quite safe.

Alpha. Dwarf. Deeply lobed, golden green leaves with narrow rust zone and large, dark, glowing scarlet flowers. \$1.00.

Crystal Palace Gem. Yellow green leaves with deeper green central blotch. Scarlet flowers. \$1.00.

Distinction. Small, round green leaves, toothed on edge, with a sharply outlined dark zone close to edge. Compact small plant. Often first choice of local customers. Cherry flowers. \$1.25.

Happy Thought. Striking, scalloped leaves, white center with splashes reaching thru the green border. White area veined green. Red fls. \$1.00.

Jubilee. Bronze yellow leaves with broad rust brown zone. Grows well outside. \$1.00.

Miss Burdett Coutts. Silvery green leaves bordered with ivory and a zone of brilliant red and brown. Easy to grow and one of the most brilliant in color. \$1.50.

Mrs. Cox. Green leaves edged yellow. The wide zone is brilliantly splashed scarlet, crimson and brown. Very rare. \$1.50.

Mrs. Pollock. Green leaves edged yellow. Wide zone splashed scarlet. Similar but less colorful than Mrs. Cox. \$1.00.

Skies of Italy. Sharply lobed green leaves with wide brown zone, splashed red. Older plants become very colorful. \$1.25.

THE GESNERIA FAMILY — Gesneriaceae

Includes Gloxinia, Smithiantha, Isoloma, Episcia, Streptocarpus, Aeschynanthus, Achimenes, Columnea and ending here with Saintpaulia. Many have received other names by botanists. We use the valid names approved by **Gentes Herbarum**.

The Gesneriads listed here are tropical or semi-tropical. They are strictly house plants outside of the tropics. Most of them are for the warm house. All are either tuberous rooted and deciduous or fibrous rooted and evergreen.

Culture. In many respects they require similar treatment. All require acid soil containing a large proportion of peat, sphagnum or leaf mould. If grown in pots, sand or Sponge Rok,—a manufactured product should be added to improve drainage. Sponge Rok helps aerate the compost also in pots or baskets.

All of the following plants need frequent watering. They are in porous soils that quickly dry out and they should never become quite dry. Warm water is best. If the sun touches wet foliage, unsightly spots result. All are shade or semi-shade plants and all do best if given liquid fertilizer at 3 or 4 week intervals. All must be kept free of mite, mealy bug or other pests.

Best Temperature for nearly all is 60° to 80°. Those we list are tropicals. *Streptocarpus* like cool temperatures, 50° to 70° or cooler.

Gloxinias. The valid botanical name is, "Sinningia." Only the hybrids are of garden value. They are vastly different from the wild *Sinningia* and we do not care much for the forms, such as "Slipper type" that revert back to their wild prototype. The best *Gloxinias* grown in America are the product of two California firms, Antonelli and Vetterlee. This applies to the named varieties, Emperor William, etc., as these are reproduced from seed and are variable.

Culture. There should be much coarse sand in *Gloxinia* soil, the balance mostly peat and leaf mould. Soil formula advised for *Amaryllis* is excellent. They need rather more sun than most of their relatives. If plants are "leggy" they did not get enough sun.

Gloxinias. The old time ten. Improved. California grown, 1¼" to 1½" tubers, in the following sorts: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled, dark crimson; **Tigrina**, from light rose to dark lavender. Characteristics are the small tiger spots; **Violaceae**, soft violet. Price 40c ea. 6 for \$2.00, if all one kind or assorted and in one bag. Complete collection, labelled, \$3.75.

New Hybrid Gloxinias. Originated and grown by Vetterlee or Antonelli. **Tigrinia Crimson Rose** and **Pink Edge** are described by their names. 50c ea. The following are all 1954 Antonelli introductions. **Blue Heaven**, a new blue. **Ruby**. Bushy, scarlet. **Stardust**, huge burgundy red. **Velvet Queen**. Huge, ruffled, velvet red. 90c ea. All six new varieties for \$4.35.

Complete Collection of 16 listed *Gloxinias* labelled for \$7.90.

Gloxinia Seed, Houdyshels, saved from our named varieties, assorted. This contains the largest number of seed. **Antonelli hybrids**, from their best new varieties, assorted. 10 or more seed. **Beacon**. Rich dark red flowers. This and the following named varieties come true to name. **Crimson Glow**. Name describes color. Free blooming. **Rose Sensation**. Brilliant carmine rose. **Swiss Emblem**. Brilliant scarlet red, white margin. Your choice of packets 50c ea. The 6 packets for \$2.75. The number of seed in each packet is in proportion to their unit value and from 10 to 50. Tho tiny, every seed grows. Send stamped addressed envelope for all seed packets.

Culture. Place fine grained vermiculite or terralite in the bottom of a plastic refrigerator dish ¼" deep and moisten well. Plant seed very thinly over surface. Keep covered with lid until plants are ready to pick out. One must make sure that moisture does not escape and add water if it does. They may be picked out and transplanted into 2" pots after second pair of leaves develop. We also plant seed in 9" pans, half filled with peat and milled sphagnum. When planted cover pot with glass. We grow many rare seeds by either method, including African Violets. *Gloxinias* flower at about 5 months.

Streptocarpus are fibrous rooted evergreen and can only be moved as growing plants. The culture is much the same as for *Gloxinias* except as to temperature. They thrive in a cool house and are easily grown in a lath house in summer. The color range is similar. The flowers are smaller and freely produced. They are followed by long twisted seed pods, hence their name. \$1.25 ea.

Streptocarpus seed. Assorted colors from fine strains. Handle as advised for *Gloxinia* seed. \$1.00/pkt. and self addressed stamped envelope.

S. Wiesmoor Hybrids. These are claimed to be entirely new and superior to any others.

Fls. resemble orchids and are on wiry stems, useful for cut flowers. These are Dutch import and expensive. You therefore get fewer seed for \$1.00. (Stamped, addressed envelope.)

Episcias resemble African Violets in the shape of the leaves and contour of plant, yet are entirely distinct. African violets flower profusely. Episcias are very showy foliage plants and usually flower but once a year. They are natives of the America tropics, not African. Their flowers are solitary or clustered, not in cymes as in African Violets. The resemblance is casual, not botanical. But their red flowers and general contour of the plants have resulted in promotion of *E. fulgida* as a Red Violet. They are very tender tropicals and should not be colder than 60°. At about 50° they are badly damaged or killed, hence cannot be shipped when likely to encounter temperatures under 50°. They make stolens or runners like a strawberry and new plants are made in a similar manner.

Culture: We plant in baskets of sphagnum and hairpin the little plants to sides and bottom of basket. Or stolens may be allowed to hang as jewelled pendants. They may also be grown in pots, same soil as African Violets. Either way they require constant moisture. When you receive the plants do not remove or tear apart the mass of sphagnum which contains their delicate roots. Plant the entire mass. In no case will we ship Episcias until warm weather arrives, but file your order early as we do not want to propagate more plants than can be sold. In the following list of species and varieties we are changing some names which we found were invalid. Old names are enclosed in parentheses (thus).

We are unable to convey to you in words, the great beauty of these foliage plants and therefore descriptions merely mention color of the lovely flowers, ground color of the leaf and color of the central zone which extends pinnately into the ground color.

Episcia cupreata. Type variety. Red flowers. Very dark bronze leaves with a slight silvery tone along midrib.

The following are cultivars or sports of *E. cupreata*. All have the same red flowers.

E. Acajou. Dark bronze with wide silvery green midrib.

E. Chocolate Soldier. Dark chocolate with narrow silver midrib.

E. Emerald Queen. Dark green with silvery green midrib.

E. Frosty. Prevailing color is the frosty green, spreading to leaf margins from the center and toward the margin are markings of dark green.

E. Harlequin. Very shiny leaves, wide green zone along midrib with very dark greenish bronze between pinnae from the midrib.

E. metallica ("Kitty). Leaves densely covered by short hairs, or villous. Very dark bronze with silvery pink center stripe in midrib. Reverse side, vinaceous purple. We have been listing this as *E. lilacina*, as labelled when bought.

E. Silver Sheen. Silvery green leaves, narrowly bordered dark green.

E. Sylvan Beauty. Green central zone with greenish bronze on outer portion.

E. Splendens. (Variegata). Silver green markings on emerald green background. This is the last of *cupreata* cultivars.

E. cupreata, var. viridifolia. Nile green leaves. The best bloomer of all.

E. fulgida. (Coccinea, Red Flame Violet). Medium bronze with silvery green veins. Lovely red flowers,—but not a "violet."

E. lilacina, type variety (Fanny Haage). Large lilac flowers. Broad green center on greenish bronze background.

E. lilacina var. Panama is suggested by Baileya for the name of this small leafed variety usually listed as chontalensis. It is the least desirable sort. I've grown it several years and have never seen a flower. 75c.

If not otherwise indicated, price each \$1.00. The 14 varieties for \$10.00.

Columneas are epiphytic climbing vines. They may be grown in wire baskets of Sphagnum in which case they hang down as trailers. The large red flowers are gorgeous. The leaves and flowers drop if they become too dry.

C. Gloriosa is the most profuse bloomer. **C. Microphylla, C. Argunda, C. Schiedeana, C. linearis**, pink fls., **C. Banksii, C. Allenii.** Small rooted plants in late spring, summer or early fall, \$2.00 ea.

Aeschynanthes (*Trichosporum*). This is a nice trailing, almost woody vine. In

nature, they are epiphytal and climb trees. The plants are attractive and the freely produced large flowers are tubular and vividly colored.

They are tender tropicals and shipment will be made only when weather permits. We grow them in wire baskets, lined thickly with sphagnum and with peat and sand in center. They do well in pots. They require constant moisture. Leaves and flowers drop when dry.

A. *Lobbiana*. Small plants, \$2.00.

Smithiantha. (*Naegelia*) are fine, tuberous rooted, foliage plants. The rounded cordate leaves are covered by soft hairs that give a velvety appearance and cause them to change colors when viewed at a different angle. The showy flowers are long, tubular and in pink and orange shades. Minimum temperature 60° for best growth. We grow in pots. Soil like Amaryllis, with a rather greater proportion of peat.

Smithiantha zebrina. The leaves are mottled and veined red brown. Two types. **Orange flowered**, tubers \$1.00. **Pink flowered**, \$2.00.

S. cinnabarina. Gorgeous dark red velvety leaves, cinnabar red flowers. \$1.00 ea.

S. hybrida, Orange King. Very beautiful leaves with changeable colors. \$1.25.

S. hybrida, Orange Delight. Foliage mottled red-brown. Flowers orange outside, yellow, spotted orange inside (as most of them are). \$1.00.

Collection of all 5 varieties, \$5.50.

Assorted seedlings, 50c and \$1.00 ea.

Smithianthas are not dormant on an exact date. They cannot be stored a long time. Therefore order early and we can send good tubers as soon as ready.

ACHIMENES

In 1953 we grew our Achimenes in a lath house. Due to California's cool nights we had few flowers and for the same reason added to an early cold spell in the fall our tubers were too small to sell. We left all in the baskets and moved to a greenhouse. This year we have excellent tubers to offer you.

Culture: From 1 to 5 tubers may be grown in a 5" pot. We grow them entirely in wire baskets and this seems to us to be the perfect way. We use 16" baskets but for amateurs we recommend 10" baskets rather than larger or smaller. For only 2 or 3 it is all right to use pots or 8" baskets.

The compost in pots may be the same as for Gloxinias and other Gesneriads. In baskets we line them first with sphagnum and fill center with fibrous peat. It would probably be better to use equal parts of peat and coarse leaf mould.

The name is said to mean that they do not like the cold. This may be fanciful but is nevertheless true. They like warm days and nights. A good temperature will not be under 60° at night and up to 80°, daytimes and higher does not hurt them.

Plant tubers in a horizontal position and cover about 1". We mulch surface with thin layer of sphagnum to prevent erosion when watering. Keep them only a little moist until growth is well started. When growing well, keep them wet.

Andersoni. Long cascading stems with green foliage and deep blue flowers. 20c. 3/50c.

Atropurpurea. Strong grower with green foliage, red purple flowers. Early. 20c. 3/50c.

Camille Brozzoni. Sturdy, small plant with 15" stems. Small lilac fls., profusely borne. 30c. 3/80c.

Diadem. Velvety green leaves. Large fuchsia purple fls. 35c.

Edmond Bossier. Improved. Purple striped fls. with yellow center. 25c. 3/60c.

Ghiesbreghti. Large green leaves. Large tubular red violet fls. 40c.

Grandiflora. (Mme. Geheune.) Red bronze, hairy leaves. Rose purple fls. 35c. 3/90c.

Harry Williams. Tall, upright stems with brown marked and veined leaves. Flowers near red or cerise. 40c. 3/\$1.00.

Little Beauty. Dwarf, very dark foliage. Cerise pink fls. 25c. 3/65c.

Longiflora Major, (Magnificum). 12" stems very large blue flowers, up to almost 3" wide. 30c. 3/85c.

Magnificent. Sturdy plant with 20" stems. Bronze foliage and petunia purple flowers. 35c.

Mexicana. A form of Longiflora. Dark blue fls. with white blotch in center. Blooms early and thru a long season. 35c.

Miniatia. Cherry red to carmine fls., yellowish in throat. Early. 35c.

Patens. Compact low habit, foliage veined dark red. Petunia purple fls. (Reddish violet), white throat. 35c. 3/90c.

Royal Purple, (Purple King, Pulcherrima) Many believe this is the finest and most satisfactory of all. Probably it gives the most flowers, for the longest time, for the least effort of any. It never fails. Foliage red bronze, fls. red-purple. 10c ea., straight.

Scarlet Beauty. Very tall stems and really red-scarlet flowers. 45c.

Venusta. Foliage reddish on underside. Fls. dark violet purple, having a slight tendency to come semi-double. The only double. 35c.

Vivid. Small habit, dark rich red foliage and vivid red purple fls. 25c.

Tubiflora is often classed with Achimenes. However, it makes a potato-like tuber. Botanists classify it as Dolichoderia tubiflora. Flowers are large, pure white and fragrant. Largest tubers \$1.00. Medium 50c.

Assorted varieties of Achimenes. 20 for \$1.00. May we substitute if out?

AFRICAN VIOLETS — Saintpaulias

The latter is the correct botanical name. They are the most popular of all house plants at the present time and they are likely to retain this eminent position in popular favor indefinitely, as they deserve it. Reference to their popularity as "The African Violet Craze," is unintelligent, because it fails to recognize the especial appeal of these little plants and their adaptability for house culture. It fails to recognize the health giving value, physically and mentally of a hobby and especially of gardening. Saintpaulias appeal to all classes, all ages and to both men and women. If this be a mania, Mrs. Houdyshel and I are glad to be victims. As long as human souls love dainty beauty, African Violets will be popular.

Another important quality that will keep them eternally interesting is their versatility. At first the plants were so small and the flowers so inconspicuously blue that they escaped discovery until only about 60 years ago. In the hands of breeders, beautiful foliage and larger sizes have been developed. Flower colors have been extended to include white, pink and a purple that is almost red. There are double flowers, sweet pea shaped flowers, variegated colors, flowers with a border like picotee tulips. Indeed, no one has sufficient imagination to guess at what the future holds.

Questions Answered. Many ask questions or consult us on the following. We can save many letters by answering here. African Violets are abbreviated, "A. V." No, we have no Yellow A. V. It is very unlikely that there will ever be one. No, you cannot cross a yellow wild violet with an A. V. The first belongs to Family Violaceae and the last to Family Gesneriaceae. A. V. are unlikely to cross even with Episcia of their own family. No, there is no perfect spectrum red A. V. They are always purple toned. No, we do not have the Double Pink, yet. We will have them as soon as any one. We have them on order and we think we have selected the most promising one.

Culture. African Violets under the hand of man have been vastly improved and diversified and many new colors and forms have been produced. New species have been discovered. They have also adapted themselves to somewhat different conditions from those found in nature.

The advised range of temperatures for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase, in our living rooms.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two. Or it may result from too low relative humidity. This should be 40 to 60%.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Express is safer. Nor do we ship on very hot days in summer. We plan to ship so that they do not arrive to you on a week end and thus remain in a carton a day or two longer.

Watering. Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. The interval between waterings should be long enough to permit the top soil to become slightly dry. Do not use pots that have no hole at bottom for drainage. Use sub-irrigation infrequently. We prefer regular pot watering rather than use of wicks.

Good ventilation is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Plants have a considerable tolerance and do well in a wide variety of soils. They should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good. We use about one half compost, one half peat with enough Sponge Rok to give good drainage.

If you are unable to supply your own soil mixture, the best we know about is Black Magic or Georgia Peat African Violet mix. Both are listed under "Supplies" in this catalog.

Fertilizers. We use only Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

Sun exposure. Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity is one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely, plants in a south window, anywhere in the north temperate zone, in winters, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The color of the foliage will tell you what they can endure. When healthy plants have light, yellowish foliage they probably receive too much sun. Medium green is about right. Very dark green foliage indicates insufficient light and lack of flowers corroborates it. For checking, select a plant having green foliage, under normal conditions, not a dark foliage plant like Holly or Pink Delight nor one like Frosty having ivory or white areas.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in How To Grow African Violets (which you should have,—see our book list,) says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Greenhouse growers who force lilies for Easter are able to advance the blooming date by the use of electric light. Any kind of light will do provided the plants receive 15 to 30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the northern states where winter days are short and dull.

Humidity. The humidity of our homes is likely to be not much over 25%. One can increase the humidity around the plants sufficiently by setting the plants in saucers or in a long tray that will hold several pots. A chick feeder with guards removed makes a

good tray. These may be partly filled with small gravel. Set pots on top of gravel and pour in water until it does not quite touch pots.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. One way to remove and kill them is to use a bit of cotton on the end of a toothpick. Dip the cotton in alcohol and pick off the bugs. Do not touch foliage with the alcohol. Wonder Garden Spray, used as a spray is effective. A badly infested plant should be discarded or at least removed from the vicinity of all other house plants. All effective insecticides are poisonous. You must not breathe the fumes. You must avoid skin contact. See our listing.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mites spread to all the plants and effective measures must be at once applied. We have found the most effective remedy is to spray with Wonder Garden Spray, which is listed under "Supplies." Immediately remove infected plants into quarantine. Do not handle infected plants, then healthy plants.

Customers are invited to visit our nursery when in Los Angeles area. Drive east on Garvey, N. on Azusa, E. on Arrow Hwy. to Esther St., S. one block, or take La Verne Bus. Get off at Firey and walk west one block to Esther. Then south one block.

Distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in almost perfect condition. They did not quit blooming. We charge the customer the excess of Air Parcel Post above the cost of Parcel Post to our 8th Postal Zone. Please state in your order that you will pay the difference promptly if your estimate is too low. But send your estimated amount with order.

We usually succeed in delivering plants in excellent to perfect condition. We guarantee our plants to arrive in a living condition. Calif. Customers, **don't forget to include Sales Tax.** It costs you 5c more if we have to send you a notice.

All Aglow. Deep pink, with red-bordered eye and girl foliage. \$1.25. Sm. 75c.

Appealing. Bronze foliage with orchid bi-color supreme flower. Outstanding. \$2.50.

Bavaria. New rich sky blue, distinct white edge. Shiny quilted, emerald green lvs. White edge never fades. \$2.00.

Blue Belle. New. Medium blue, large full double. \$2.00.

Blue Lady. Large light blue flowers. Good bloomer. \$1.25. Sm. 75c.

Blue Ohio. Very large, dark blue fls., small, heavy, thick leaves. \$1.25.

Blue Tiara. Very large medium violet flowers, attractive girl foliage. \$2.00.

Blue Ridge. New. Blossoms resemble blue waves and ripples with darker shadows. Quilted glistening leaves. A wonderful bloomer. \$2.00.

Bridesmaid. New. Large light blue and white variegated double. Very pretty. \$2.00. Sm. \$1.00.

Bronze Fringette. Fls. Violet, lvs. round, crenated, very dark bronze green. Red underneath. \$1.25.

Calif. Dark Plum. Plum red flowers. Very good. \$1.50.

Caracol. Med. green, girl leaves which often curve at the base into a snail-shell twist. Flowers blue-violet. \$1.25.

Carmen. One of the best reds. \$1.50.

Christmas Star. Star-shaped light blue center on white fringed field. \$1.00.

Clementine. Frilled white flowers, girl leaf. \$1.25.

Double Inspiration. New. Very beautiful double lavender flowers. \$2.00. Sm. \$1.00.

Double Orchid Rainbow. New. A blend dark to light orchid fls. \$2.50.

Double White Lace. \$1.25.

Dream Girl. Variegated, white-bordered with blue. Lovely foliage. \$1.25.

Easter Bunny. Dwarf. Very small girl foliage, fls. deep orchid. \$1.25.

Edna Fischer. Patented. Plum shade, double, white edge. Foliage reddened below. \$1.25.

Evening Sunset. A light blue, with an overcast of pink that predominates in two petals, like sunset and blue sky. \$1.25.

Fantasia. Our new introduction. A potpourri of dots, dashes and splashes of deep violet on background of lavender. 10 to 13 flowers on a tall stem. Dark green quilted leaves. Will make a beautiful show plant. \$2.00.

Fantasy. Lavender, variegated and splotched flowers. \$1.25.

Finlandia. New. Midnight purple, fringed blossoms on very glossy dark bronzy foliage. Ruffled leaves have bright red undersides. \$2.00.

Floradora. New. Exquisite lively rosy orchid with purple overcasts. Large round fringed and ruffled blooms. Dark green ruffled foliage sporting deep rosy under tones. Most prolific in growth and blooming habits. \$2.00.

Frilled Blue Delight. Petals are frilled. White edged with blue. \$1.25. Sm. 75c.

Frosty. Variegated foliage, like a mound of snow spilling from a green salver. \$1.25.

Frosty Nite. Very much like Frosty with blue flowers. \$2.00. Sm. \$1.00.

Geneva Beauty. New. Foliage similar to Mentor Boy, purple flower, white edge, does not fade. \$2.00. Sm. \$1.00.

Gorgeous Rainbow. Beautiful double fls. white with blue markings. \$1.50.

Grotei. Trailing stems, nice for hanging. \$1.25.

Honeymoon. Our new introduction. Sport of Silver Moon, having all the good flowering habits of Silver Moon. Fls. light violet, upper petals slightly darker, sometimes with white flecks. 8 or more flowers well above beautiful large heart shaped leaves. \$2.00.

Holly. Lvs. dark copper green. Holly shaped, purple underneath. \$1.00.

Inamorata. Beautiful, large, white, double fls. with slight color tint. (More color in winter.) Free flowering. \$1.50.

Inspiration. Very large blue-lavender fls. Supreme foliage. \$1.50.

Lavenda. New. Rose pink double. A new shade in African Violets. \$2.50.

Lavender Beauty. Lovely silvery mauve flowers. Very large. \$1.00.

Lavender Delight. Large double. Flowers light wisteria violet, deeper color in center. Leaves forest green, quilted. \$2.00. Sm. \$1.00.

Lilac Time. Lovely lavender ruffled blooms, shaded orchid. As gay as springtime. Bright red flower stems and quilted foliage. \$1.50.

Los Angeles. Fls. are very large, hortense violet. Leaves ovate, medium green quilted. Flowers freely produced and fully double. \$1.50.

Moonlite. Leaves deeply crenate. Very pretty. Fls. light blue. \$1.50.

Moon Ripples. Patented. Dark blue double, edged white and frilled. \$1.25.

Navy Bouquet. Very dark navy blue, double. Profuse bloomer. Crinkled lvs. \$1.00.

New Dawn. Heart shaped, rather pointed leaves; with good light, lvs. are very dark. Reddish orchid flowers. \$1.25.

Pacific Princess. Beautiful girl foliage, dark blue fls. \$1.25.

Pacific Shadows. Dark shiny leaves. Growth flat. Flowers brilliant blue. \$1.25.

Painted Girl. Snowy white, glistening as if covered by diamond dust, bordered by orchid. Very popular. From leaves some have solid color fls. \$1.50. Sm. \$1.00.

Pansy Beauty. Rather small growing with many pansy like flowers. \$1.00.

Peach Blossom. New. Rose pink with girl foliage. Very beautiful plant. \$2.00.

Pink Attraction. Lovely large round fls. with rosy eye. \$1.25. Sm. 75c.

Pink Cheer. Deep pink flowers. \$1.25.

Pink Fantasy. \$1.00.

Pink Shocking. Very large deep pink fls. rather long in shape. \$1.25. Sm. 75c.

Pink Wonder. Patented. Most beautiful deep pink. Very large round fls. \$1.50. Sm. \$1.00.

Purple Knight. Excellent large, free flowering. Bluish purple. \$1.50.

Purple Lace. Flowers blackish violet and frilled. Foliage frilly with red underneath. \$1.00.

Queen's Cushion. Fullest double flower you ever saw. A deep purplish orchid shade. Plain green foliage. \$2.50. Sm. \$1.25.

Red Princess. An outstanding red. Crimson wine red. \$1.50. Sm. 75c.

Red Wing. Large rose red flower, heavy plain green foliage, exceptional and entirely new. \$2.50.

Rose Rainbow. Double rose and white variegated. \$1.50.

Royal Emperor. Bicolor orchid double. Dark green serrated foliage. \$2.50.

Silver Lining. Patented. Light blue double, edged white, keeps well in summer. \$1.25.

Silver Moon. Lovely white. Blooms here all the time. \$2.00. Sm. \$1.00.

Snow Line. Patented. Red Lavender double companion plant to Silver Lining. \$1.25. Sm. \$1.00.

Snow Prince. Excellent large white. \$1.25.

Silhouette. Large flowering dark blue, deeply ruffled with a faint edge, almost a tint. \$2.00. Sm. \$1.25.

Starglow. Fine white fringed. \$1.50.

Texas Fringe. New. Leaves are very dark green with light green veins, red underneath. Both waved and fringed. Fls. rich orchid and always fringed. Prolific bloomer. Seven to ten blossoms on each stem. \$2.50.

The Bride. New. Double white with blue center. Excellent. \$2.50.

Velvet Queen. New. Ruffled edge, orchid color, hybrid seedling from Ruffled Queen. \$2.50.

Violette Elf. Dwarf. Very attractive small plant with flowers well above foliage. \$1.25.

White Madonna. Double white, with girl foliage. Very beautiful. \$1.75. Sm. \$1.00.

Wintergreen. Variegated foliage, blue and white double flowers. \$2.00. Sm. \$1.00.

Wintry Nite. Similar to Wintergreen but has dark blue dbl. fls. Both require very good light to keep the variegated foliage. \$2.00.

Beginners Collections. Our selection. Let us know what you have and we will not duplicate. 1 African Violet \$1.00. 2 for \$1.75. 3 for \$2.50. 5 for \$4.00.

As many of the new varieties are in short stock please list a substitute.

Please be sure to add Sales Tax for California Orders.

Leaves 50c each. \$5.00 per dozen.

Appealing	Fischer's Eclipse	Snow Line (Dbl.)
Apple Blossom	Floradora	Sunrise Supreme
Ballerina Bolero	Frilled Dupont	Starglow
Bavaria	Frosty	Show Aristocrat (Dbl.)
Blue Belle (Dbl.)	Frosty Nite	Show Boy
Blue Tiara	Helen Montgomery	Show Blue
Blue Buttercup	Inspiration	Show Darling (Dbl.)
Brenita Girl	Iowa	Show Knight (Dbl.)
Bridesmaid (Dbl.)	Geneva Beauty	Show Man
Blue Ridge	Lavender Delight	Show Pink
Blue Warrior Supreme	Moonlight	Show Promise
Carmen	Peach Blossom	Show Sensation (Dbl.)
Clementine	Purple Hour	Texas Fringe
Dbl. Inspiration	Pink Triumph	The Bride (Dbl.)
Dbl. Orchid Rainbow	Red Princess	Velvet Queen
Dream Girl	Royal Emperor (Dbl.)	White Caps
Easter Bunny	Ruffled Queen	White Madonna (Dbl.)
Edith	Silver Lining	Wintergreen (Dbl.)
Edith Cavelle	Silhouette	Wintry Nite (Dbl.)
Fantasy Supreme	Silver Snow	
Finlandia	Springfield Beauty (Dbl.)	

African Violet Leaves. 35c ea. 3 for \$1.00. 12 for \$3.00. Over 12 leaves 25c ea.

All Aglow	Beauty Girl	Blue Beau
Alma Wright (Dwarf Dbl.)	Betty	Blue Heiress
America	Black Beauty	Blue Jewel
Azure Beauty Imp.	Black Fringe	Blue Lady

Blue Ohio	Holly	Pink Fantasy
Blue Triumph (Dbl.)	Indianola	Pink Lustre
Blue Velvet	Innocence	Pink Shocking
Blue Warrior	Juno	Portland Rose
Brenda Girl	Lacy Girl	Purple Lace
Bronze Bicolor	Lady Grace	Purple Knight
Bronze Fringette	Lady Loreta	Queen Betty
Bronze Girl	Lavender Beauty	Red Lady
Calif. Dark Plum	Lavender Pink Princess	Rose Crinkles
Caracol	Lilac Time	Royal Girl
Christina	Lovely Lady	Royal Ripples
Christmas Star	Maple Girl	Ruby Bouquet
Corsage (Dbl.)	Maroon	Ruby Jewel
Delight (Dbl.)	Maro	Ruffled Beauty
Double Neptune	Minuet Girl	Sailor's Delight (Dbl.)
Double Orchid Sunset	Moon Ripples (Dbl.)	Sailors Girl
Double Rose	Narbonne	Sea Girl (Dbl.)
Double White Lace	Navy Bouquet (Dbl.)	Snow Prince
Dupont Lavender Pink	New Dawn	Star Amethyst
Enchantress	Norseman	Supreta
Evening Sunset	Oak Leaf Girl	Sweet Alice (Dbl.)
Fairy Boats	Orchid Geneva	Taffita
Fairy Queen	Pacific Princess	Tear Drop (Dwarf Dbl.)
Fairy Tales	Pacific Shadows	Temple Pink
Gaucho	Painted Ballerina	Temple Satin
Geneva Pink	Pansy Beauty	Twilight
Gorgeous Bicolor	Perfection	Velvet Girl
Gorgeous Rainbow (Dbl.)	Pink Attraction	White Corsage (Dbl.)
Grotei	Pink Cheer	Western Girl
Helen Wilson Bouquet (Dbl.)	Pink Delight	Wine Velvet

BEGONIA FAMILY — Begoniaceae

How to Grow Tuberous Begonias. No plant or flower is more beautiful than that of a well grown Tuberous Begonia. They may be grown in pots or in the garden in most states. They are semi-tropical but do not do well in the tropics. Florida customers have reported failure.

In Calif., south of San Francisco, they do best near the coast but we grow fine plants and flowers in this hot, dry inland valley by cooling them off by daily sprinkling plants. Our flowers tho are smaller than those grown in cooler areas. Water hurts neither foliage nor flowers. The best place is in a lath house, north of a building or under trees here.

Worth Brown, in his book on Tuberous Begonias (which you should have; see our listing under "Books") recommends them also for pot culture in the house or greenhouses. The tubers we sell should have 7" pots.

A loose sandy soil containing much well rotted leaf mould is best. For pots, one may use $\frac{2}{3}$ leaf mould and $\frac{1}{3}$ rich, very sandy loam. If not very sandy add enough sand to the mixture to make it quite gritty. Most commercial growers add a very small portion of dry, powdered steer or sheep manure or well rotted stable manure. It should not be close to the tuber. Do not venture to be liberal. It is probably safer to use liquid fertilizer like Spoonit when plants are well advanced in growth. It is safe to add a tablespoonful of bone meal to each pot.

Do not pot or plant tubers until a sprout appears. A famous grower advises they be spread out in a warm, dark room, the eye up, for sprouting and that moist sphagnum is unnecessary. For potting directions see general culture. Pot or plant sprouted tuber, covering entire tuber. Begonias are shade plants but to bloom well they should have all the sun they can stand without burning.

Begonias like moisture but do not over water starting tubers or small plants. It is a good plan to dust tubers with sulphur to prevent mildew. If it starts, use sulphur.

If you want fine large flowers, pinch off all but one sprout on tuber—except on the Lloydi. Dropping of buds may be caused by mildew, overwatering, lack of fresh air circulation, too dense shade or too hot.

We list 1 $\frac{1}{4}$ " - 1 $\frac{1}{2}$ " tubers, a medium size. The size of tubers does not govern size of flowers. Even small tubers produce full sized flowers, but smaller plants. Culture does affect size of flowers and plants. For the best reference book on Tuberous Begonias get Worth Brown's book listed in this catalog.

Imported Begonias. Be sure you do not purchase them. They are fine looking tubers but produce poor flowers. The great improvements made in recent years are wholly due to a small group of California growers, including Brown, Antonelli and Vetterlee. We list only their Begonias, selecting from each the types for which they are especially noted.

Prices. Please note that the dozen rate applies only when 6 or more tubers of one kind or assorted are packed in one bag. If separately labelled, 12 tubers take the single rate as is our rate on all bulbs.

Giant Double Camellia Flowered. Ten colors: white, pink, rose, American beauty, yellow, apricot, salmon, orange, scarlet, red. Price 30c ea., six, one color only or assorted in one bag, \$1.50. The ten var., in one bag for \$2.60.

Giant Ruffled Double Camellia Flowered, by Antonelli, nine colors: white, rose, scarlet, red-salmon, blush, apricot, pink, yellow, cardinal. 35c ea. 6, one kind or assorted, \$1.75. All 9 in one bag for \$2.60.

Giant Double Carnation Flowered. Same as Camellia type except petals are fringed. Nine colors: white, pink, rose, crimson rose, yellow, apricot, salmon, orange, scarlet. 30c ea. 6 of one kind or assorted, \$1.50. All 9 colors in one bag for \$2.25.

Giant Double Picotee. Camellia type fls., with petals edged white. Five colors: pink, rose, apricot, salmon, red. 30c ea. 6 of one kind or assorted, \$1.50. All 5 colors in one bag for \$1.30.

Giant Single Crispa or Frilled. Very large, profusely frilled and ruffled, single flowers. Nine colors: red, rose, scarlet, pink, salmon apricot, yellow, orange, white. 30c ea., 6 of one kind or assorted, \$1.50. All 9 colors in one bag, \$2.25.

Giant Single Marginata. A two-toned Crispa type in 2 colors, white edged pink and salmon, edged scarlet. 30c ea. Six one color or assorted, \$1.50.

Double Hanging Basket, or Lloydi, by Antonelli, who is said to have the best. Just right for baskets but look nice in pots or in a rock garden. The long pendant stems are loaded with small Camellia and Rose type flowers. 8 colors: white, pink, rose, scarlet, orange, yellow, salmon, apricot. 35c ea. 6 of one color or assorted, \$1.75. All 8 colors in one bag, \$2.35.

Begonia Evansiana. Hardy Tuberous Begonia. No northern customers have reported its loss by freezing. If mulched we will guarantee hardy. Large tubers can be planted 4" deep, smaller in proportion. The 2 ft. plants have typical begonia foliage and a multitude of pink flowers. Recommended for shade garden, but stands quite a bit of sun if watered liberally. Order as early as possible, as often long sprouts have developed by Apr. 1. Sizes as available, 50c ea. 6 for \$2.50.

Begonia Collection #1. One tuber of each of above 53 var. Price \$13.25.

Creme de la Creme of all Tuberous Begonias. **Named varieties.** These are the finest ever produced.

Autumn Glow. Extremely large cristata. The crests are deep copper contrasting with the apricot of the rest of the flowers. Up to 10" wide.

Fascination. A crispa flower, white with a pink line on the edge, or picotee edge.

Red Triumph. A ruffled camellia type of ruby red with a velvety texture. Very large flowers.

Sunset. Profusely frilled crispa type, light copper with scarlet edge.

These are not graded to size but are usually close to 2" and will make large plants. Price \$1.00 ea., or the 4 var. for \$3.50.

Begonia Collection #2. Includes Collection No. 1 and the 4 named var., for \$16.50.

THE ORCHID FAMILY — Orchidaceae

Cymbidiums and Cypripediums are easily grown in living rooms if humidity is increased by a method as we have advised for African Violets.

Cymbidiums are very useful for corsage flowers. We can supply the following: **Butterfly**, cream to tan; **Doreen**, greenish bronze; **Giganteum**, red-brown; **Moira**, greenish bronze, barred rose; **Winter Cheer**, bronze and deep rose. Price \$2.50 per front bulb with foliage. **Madeline**, deep pink, \$5.00; **Hookerianum**, olive green, \$4.00. **Assorted varieties**, unlabelled, \$2.00.

How to Grow Cymbidiums is told in our "How To Grow Orchids," a 10 p. pamphlet. Send 25c for it. **How To Grow Cattleyas**, Cypripediums and a few others is told in our 1949 Orchid Price List. The listings are cancelled. Price 15c.

We ship Cymbidiums, loose roots, and out of pot only. By Express, f.o.b. Potted Cymbidiums do not travel well unless in an expensive crate. If you want them to come by mail, send **75c extra per plant** for extra heavy packing material and for postage. We ship by mail at your risk only so be sure to send the insurance fee, which will protect you. By mail you will save at least \$1.00 up to \$2.00 and we advise this if insured.

Cypripedium callosum. In shape, similar to our native Lady Slippers and closely related. Correct botanical name is Paphiopedilum but usually known as above. Flowers are fine for corsages. $3\frac{1}{2}$ " - 4" wide, white variously marked with green and purple veins and a brown purple lip. Blooms about Jan. to Apr., sometimes later. The best potting mixture is osmundine and sphagnum, equal portions. Require deeper shade than Cattleyas and Cymbidiums. Shipped only in pot, by express, f.o.b. Price reduced to \$5.50.

Cattleyas. We offer fine hybrids and species (only those species are included that produce fine flowers for cutting) that have been recently repotted in fresh osmundine. They will not need repotting for 2 or 3 years when they should be too large for their pots. **Our selection** of blooming size plants. Tell us what you have and we will not duplicate them. Price \$5.00, express, f.o.b. **C. Enid**, \$7.50, express, f.o.b.

If you are experienced in potting Cattleyas we can send out of pot plants, our selection, 3 or more pseudo bulbs for \$4.00 postpaid. Unlabelled plants, \$3.50.

Bletilla hyacintha. Lovely hardy, terrestrial orchid. Plant before Mar. 1. The best soil contains much sand and peat. 8 to 12 lovely little purple orchids on a scape 15" tall. Price 40c. 3 for \$1.00. \$3.50/doz. postpaid. \$25.00/100 by express, f.o.b.

Osmundine, best Florida brown grade, \$1.35/lb. postpaid.

For scale on orchids, spray with Thrip O cide. See listing under Garden Supplies.

MISCELLANEOUS

Anemones and Ranunculus. **Ranunculaceae.** Anemones are mostly blue but some are red, pink, or white. The flowers of this strain are mostly single which we prefer in Anemones.

Ranunculus range in color from red, pink, yellow to white. This strain produces the largest and most double flowers.

Tecolote Ranunculus and Anemones, large size for growing in pots or in the garden. This size gives larger fls. on taller scapes and forces well in pots. Price, either Ranunculus or Anemones, 2 for 15c. 50c doz.

Culture. Hardy only in deep south. It is best to start after summer heat has gone—in mild autumn weather. They can be started here in a flat of moist sphagnum moss, or sand in the cool shade of a tree. Don't forget to keep them moist. Transplant to garden in deep south or to pots in north. You can start them or grow them in a cool room in the house in winter. They should have sandy soil with peat added.

Ctenanthe oppenheimiana, var. tricolor. **Marantaceae.** A beautifully colored foliage plant. The foliage is striped light and dark green on upper surface with a few white stripes and blotches. The under side is maroon. Grow in 5" pots, acid soil—peat or sphagnum with sand. We will ship, out of pot, postpaid, for \$1.75, or in clay pots, by express, f.o.b., for \$1.75.

Maranta Kerchoveana. Rabbit Tracks. Nice, easy-to-grow shade plants, for pots. Acid soil. 75c.

Peperomia. Watermelon-striped leaves. They make a most attractive small foliage plant along with other small plants like African Violets. Establish in a 4" or 5" pot, acid soil of peat, sand and leaf mould. Shade. 75c, if with other plants, or \$1.00 if alone.

Ceropegia. The following are vines having long trailing or twining stems. They may be grown in soil composed of loam, sand and leaf mould or peat, in pots or hanging baskets. Plant at once and keep only slightly moist until started. The flowers are very unusual. Prices are for small tubers or cuttings.

Ceropegia Woodi. Hearts on a String. Sweetheart vine. Rosary vine. Heart shaped leaves. The most desirable species. 50c.

C. debilis. Cylindrical leaves. Rapid grower. 35c.

C. Barkleyi. The oblong leaves are pointed at the apex. 60c.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Aregelia, Aechmea, and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical, or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of 1/4 sand or sandy loam and 3/4 peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture of Aechmea and Aregelia** is the same.

Aechmea calyculata. Bright green leaves, yellow fls. \$2.00.

Billbergia Burkholzii. Tall, slender, erect green leaves. Rose bracts, lavender fls. \$2.00.

B. distachia. Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 75c.

B. Elvenia Slosson (Nutans x Alberti). Tall plant with very attractive flowers in spring. It takes a lot of postage and its fine quality makes it cost \$3.00 each.

B. nutans. Mid-winter, beautiful inflorescence on small plants. Fine pot plant. 75c.

B. nutans x Cryptanthus acaulis. Highly colored bronze and green leaves. Compact plant. \$1.50.

B. pyramidalis. Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

B. rubro-cyanea. Most colorful foliage, red and green spotted cream. Green fls. edged blue. Crimson bracts. \$1.00.

B. speciosa. Green lvs., striped on back. Green fls., tipped blue. Rose bracts. \$2.00.

B. Theodore L. Meade. Green lvs. and large, beautiful inflorescence, continuous all year on new growths. \$1.50.

B. thrysiflora (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

B. Zebrina. Lvs. banded white on back. Salmon bracts, green fls. \$1.50.

Collection all 12 varieties. Express f.o.b., \$16.00. By this method we can send larger plants. By mail, postpaid, \$18.00.

Big 4 Collection. Nutans, Distachia, Rubro-cyanea and Zebrina. Value \$3.50. Price \$3.25. Include Special Handling for these plants by mail.